

THE REMARKS

Claims 1, 2, 4-12, 17-19 and 21-23 were pending prior to entering the amendments.

The Amendments

The amendment in Claim 1 is supported by Paragraphs [0044] and [0048] of US Publication 2007/0224104.

New Claims 24 and 25 are supported by Paragraphs [0035] and [0036] of the Publication.

The other amendments are for clarity purpose only.

Other amendments are to clarify the meaning of the claim or to correct antecedent basis.

No new matter is introduced in any of the above amendments. The Examiner is requested to enter the amendment and re-consider the application.

Interview with the Examiners

Applicant thanks Examiners Brittany Martinez and Stuart Hendrickson for the telephone interview dated September 8, 2010. During the telephone interview, it was agreed that the proposed amendment in Claim 1 would overcome the prior art rejection. It was also agreed that Claim 21 would be cancelled. It was further agreed that applicant would provide proper support of Claim 22, and the Examiner would consider it.

Claim Objections

Claim 21 is objected to under 37 CFR 1.75(c), as allegedly being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 21 is cancelled.

35 U.S.C. § 112, First Paragraph, Rejection

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement.

At Paragraph [0015] of the Publication, it describes that when the present invention is applied repeatedly to the obtained Y-branched carbon nanotubes, the branches can spread out

and, as a result, three dimensional tree-like carbon nanotubes with plural branches can be produced.

In addition, example 7 of the present application discloses a process to produce multiple Y-branched carbon nanotubes by repeating procedures analogues to example 1 by using the Y-branched carbon nanotubes produced in example 1.

Therefore, Claim 22, as amended, are fully supported by the application.

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement.

As discussed above, Claim 22 is fully described in the application and is enabled as evidence by Example 7.

35 U.S.C. § 112, Second Paragraph, Rejection

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The rejection is overcome in view of the claim amendment.

35 U.S.C. § 102(b)/103(a) Rejections

Claims 1, 2, 4-9, 12, 17-19 and 21-23 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tsai et al. (Carbon).

Claims 1, 2, 4-9, 12, 17-19 and 21-23 are allegedly obvious over Tsai et al. because anticipation is the epitome of obviousness.

The above rejections are overcome in view of claim amendments.

The technical characteristic of the present invention lies in first obtaining non-catalyst loaded carbon nanotubes or carbon nanofibers, loading the CNTs or carbon nanofibers with a catalyst, pre-treating the catalyst-loaded CNTs or carbon nanofiber to have the catalyst bonded tightly to the surface of the CNTs or carbon nanofibers, and synthesizing new CNTs or new

carbon nanofibers to have the new CNT branches growing from the bonded catalyst particles on the original CNTs or nanofibers. (see Publication at Paragraph [0014])

As can be seen from Fig. 3 of Tsai, Tsai performs CNT synthesis after loading the Pd catalyst on the silicon substrate (Fig. 3(a) of Tsai), i.e., Tsai does not load Pd on a CNT or nanofiber (instant Claims 1(a) and (b)).

In Tsai, the CNTs start to grow and protrude from the silicon substrate, whereas in the instant Claim 1(d), the new CNTs are grown at the position where the catalyst is bound.

In summary, Tsai does not obtain non-catalyst loaded carbon CNTs or carbon nanofibers, does not load a catalyst on the pre-existed CNTs or carbon nanofibers, and does not go through a pre-treatment stage to bind a catalyst to the CNTs or carbon nanofibers. Further, Tsai does not perform a synthetic reaction of new carbon nanotubes or new carbon nanofibers at the position where the catalyst is bonded.

Therefore, Claim 1 and its dependent claims are not anticipated by Tsai or obvious over Tsai.

35 U.S.C. § 103(a) Rejection

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Tsai et al. as applied to Claims 1 and 9 above, and further in view of Kishi et al. (US Patent No. 6,869,581).

Claims 10 and 11 are dependent claims of Claim 1. For the same reason as stated above, Claims 10 and 11 are not obvious over Tsai and Kishi.

CONCLUSION

Applicants believe that the application is now in good and proper condition for allowance. Early notification of allowance is earnestly solicited.

Respectfully submitted,

Date: September 15, 2010



Viola T. Kung, Ph.D. (Reg. No. 41,131)

HOWREY LLP
2941 Fairview Park Drive, Suite 200
Falls Church, VA 22042
Tel: (650) 798-3570
Fax: (650) 798-3600